

<b>Pushing the Envelope</b>			
<b>1999 Science</b>			
<b>Core Curriculum</b>			
<b>New York Science</b>			
<b>Grades 5-8</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Types of Engines ( pgs. 11-23)	NY	SCI.5-8.4.P.16	Determine the speed and acceleration of a moving object.
Chemistry (pgs. 25-41)	NY	SCI.5-8.4.P.13	Determine the identity of an unknown element, using physical and chemical properties.
<b>Pushing the Envelope</b>			
<b>1999 Science</b>			
<b>Core Curriculum</b>			
<b>New York Science</b>			
<b>Grades 5-8</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Types of Engines ( pgs. 11-23)	NY	SCI.5-8.4.P5.1b	The motion of an object can be described by its position, direction of motion, and speed.
Types of Engines ( pgs. 11-23)	NY	SCI.5-8.4.P5.1d	Force is directly related to an object's mass and acceleration. The greater the force, the greater the change in motion.
Chemistry (pgs. 25-41)	NY	SCI.5-8.4.P3.1c	The motion of particles helps to explain the phases (states) of matter as well as changes from one phase to another. The phase in which matter exists depends on the attractive forces among its particles.
Chemistry (pgs. 25-41)	NY	SCI.5-8.4.P3.2e	The Law of Conservation of Mass states that during an ordinary chemical reaction matter cannot be created or destroyed. In chemical reactions, the total mass of the reactants equals the total mass of the products.
Physics and Math (pgs. 43-63)	NY	SCI.5-8.4.P5.1c	An object's motion is the result of the combined effect of all forces acting on the object. A moving object that is not subjected to a force will continue to move at a constant speed in a straight line. An object at rest will remain at rest.
Physics and Math (pgs. 43-63)	NY	SCI.5-8.4.P5.1d	Force is directly related to an object's mass and acceleration. The greater the force, the greater the change in motion.
Physics and Math (pgs. 43-63)	NY	SCI.5-8.4.P5.1e	For every action there is an equal and opposite reaction.
Rocket Activity (pgs. 69-75)	NY	SCI.5-8.4.P5.1c	An object's motion is the result of the combined effect of all forces acting on the object. A moving object that is not subjected to a force will continue to move at a constant speed in a straight line. An object at rest will remain at rest.
Rocket Activity (pgs. 69-75)	NY	SCI.5-8.4.P5.1d	Force is directly related to an object's mass and acceleration. The greater the force, the greater the change in motion.

Rocket Activity (pgs. 69-75)	NY	SCI.5-8.4.P5.1e	For every action there is an equal and opposite reaction.
<b>Pushing the Envelope</b>			
<b>1999 Science</b>			
<b>Core Curriculum</b>			
<b>New York Science</b>			
<b>Grades 9-12</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
History of Aviation Propulsion (pgs. 5-9)	NY	SCI.9-12.L.1.1.1.b	Learning about the historical development of scientific concepts or about individuals who have contributed to scientific knowledge provides a better understanding of scientific inquiry and the relationship between science and society.
Types of Engines (pgs. 11-23)	NY	SCI.9-12.P.4.5.1.i	According to Newton's First Law, the inertia of an object is directly proportional to its mass. An object remains at rest or moves with constant velocity, unless acted upon by an unbalanced force.
Physics and Math (pgs. 43-63)	NY	SCI.9-12.P.4.5.1.i	According to Newton's First Law, the inertia of an object is directly proportional to its mass. An object remains at rest or moves with constant velocity, unless acted upon by an unbalanced force.
Physics and Math (pgs. 43-63)	NY	SCI.9-12.P.4.5.1.j	When the net force on a system is zero, the system is in equilibrium.
Physics and Math (pgs. 43-63)	NY	SCI.9-12.P.4.5.1.k	According to Newton's Second Law, an unbalanced force causes a mass to accelerate.
Physics and Math (pgs. 43-63)	NY	SCI.9-12.P.4.5.1.q	According to Newton's Third Law, forces occur in action/ reaction pairs. When one object exerts a force on a second, the second exerts a force on the first that is equal in magnitude and opposite in direction.
Rocket Activity (pgs. 69-75)	NY	SCI.9-12.P.4.5.1.i	According to Newton's First Law, the inertia of an object is directly proportional to its mass. An object remains at rest or moves with constant velocity, unless acted upon by an unbalanced force.
Rocket Activity (pgs. 69-75)	NY	SCI.9-12.P.4.5.1.j	When the net force on a system is zero, the system is in equilibrium.
Rocket Activity (pgs. 69-75)	NY	SCI.9-12.P.4.5.1.k	According to Newton's Second Law, an unbalanced force causes a mass to accelerate.
Rocket Activity (pgs. 69-75)	NY	SCI.9-12.P.4.5.1.q	According to Newton's Third Law, forces occur in action/ reaction pairs. When one object exerts a force on a second, the second exerts a force on the first that is equal in magnitude and opposite in direction.
<b>Pushing the Envelope</b>			
<b>1999 Science</b>			
<b>Core Curriculum</b>			
<b>New York Science</b>			

<b>Grades 9-12</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Physics and Math (pgs. 43-63)	NY	SCI.9-12.4.P.5.1.v	Students can explain and predict different patterns of motion of objects (e.g., linear and uniform circular motion, velocity and acceleration, momentum and inertia). Draw scaled force diagrams using a ruler and a protractor.
Physics and Math (pgs. 43-63)	NY	SCI.9-12.4.P.5.1.ix	Students can explain and predict different patterns of motion of objects (e.g., linear and uniform circular motion, velocity and acceleration, momentum and inertia). Verify Newton's Second Law for linear motion.
Physics and Math (pgs. 43-63)	NY	SCI.9-12.4.P.5.1.xi	Students can explain and predict different patterns of motion of objects (e.g., linear and uniform circular motion, velocity and acceleration, momentum and inertia). Verify Newton's Second Law for uniform circular motion.
Rocket Activity (pgs. 69-75)	NY	SCI.9-12.4.P.5.1.v	Students can explain and predict different patterns of motion of objects (e.g., linear and uniform circular motion, velocity and acceleration, momentum and inertia). Draw scaled force diagrams using a ruler and a protractor.